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# Comparison of Chinese medicine higher education programs in China and five Western countries

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**Abstract** *Object:* Traditional Chinese medicine (TCM) has been taught widely in the both Eastern and Western world countries. This study compared the origin, student source, duration, and curriculum design of TCM higher education programs in China and five Western countries.

*Method:* We searched the Internet and the China National Knowledge Infrastructure (CNKI) database to gather relevant information.

*Result:* All the six countries offer acupuncture and/or Chinese herbal medicine programs at universities and/or private schools. However, there are great large differences among them in the education of curriculum and TCM students enrollment and curriculum policies of TCM courses. *Conclusions:* There are large differences among their curriculum and enrollment policies. This comparison should provide information about the further development of international standards in TCM education.

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For at least 5000 years, traditional Chinese medicine (TCM) has made remarkable contribution to people's health and medical care. Along with the development of TCM education, TCM has been recognized by more and more countries and regions worldwide. Various TCM educational models have been developed that reflect differences in national policies, acceptance, understanding, and attitudes toward TCM. Some of these models are styled on Western medical models. The aim of this study was to better understand Chinese medicine higher education and provides information about its future provision. Current TCM educational practices from representative higher education institutions in five Western countries were compared and contrasted with TCM education in China.

## Traditional Chinese medical education in China

### Mainland China

The earliest tertiary institution of TCM was the Nanjing University of Traditional Chinese Medicine, which was evolved from the Jiangsu Province Advanced School of Chinese Medicine established in 1954. The first batch of TCM tertiary institutions approved by the State Council in 1956 included four universities: Beijing University of Chinese Medicine, Chengdu University of Traditional Chinese Medicine, Shanghai University of Traditional Chinese Medicine, and Guangzhou University of Chinese Medicine. According to 2013 data from the State Administration of Traditional Chinese Medicine, People's Republic of China, 45 TCM tertiary institutions and another 215 tertiary institutions provide TCM programs/majors in mainland China.

TCM tertiary institutions in mainland China usually provide programs/majors in Chinese medicine, Chinese materia medica, acupuncture, moxibustion, and *tuina*. There are also other TCM-related or medicine-related multidisciplinary programs/majors available, such as Health Service Management, Medical English, and Nursing.

For TCM education system, undergraduate programs generally take 5 years to complete. Master's and doctoral programs are both 3 years. As TCM education has a long history, education reform develops and a model for the "cultivation of innovative talents" is evolving. Take the Beijing University of Chinese Medicine as an example, in 2007, it adopted a "TCM education reform experimental program." Students were admitted to this program by an independent student recruitment process that selected applicants from families of TCM practitioners instead of through a college entrance examination. Once enrolled, students were assigned to different supervisors. This program is a combination of institutional education, master-apprentice education, and father-son education models. In 2011, Beijing University of Chinese Medicine started a 9-year Chinese medicine program called the "*Qijhuang* Program." This is a combined undergraduate and doctoral program. During the first 5 years, students are trained according to an undergraduate teaching plan. In the fourth year, an entrance examination is held to enroll eligible students directly into the subsequent doctoral program. A new "cultivation model of Chinese medicine" was implemented in 2012. This includes the following programs:

Doctor of Chinese medicine, Doctor of integrative medicine, "Doctor of Chinese medicine with *Jinghua* master-apprentice training," and "Acupuncturist and *tuina* practitioner." These programs all use an integral training model called "five plus three," which comprises 5 years of undergraduate training with preclinical courses and 3 years of internship training. Graduates from these programs will obtain a Bachelor of Medicine and Master of Clinical Medicine degree. In 2015, Beijing University of Chinese Medicine implemented new cultivation models of programs towards non-Chinese Medicine majors. For instance, the new Chinese Materia Medica program, called the "*Shizhen Guoyao* Program", is an 8-year integral program comprising both domestic and international training and combining bachelor's and doctoral degrees. Another new Chinese materia medica program called the "Excellent Pharmacists of Chinese Medicine Program" is a 6-year combined bachelor's and master's degree and aims to produce highly qualified professionals who have specialized skills in Chinese materia medica integrated pharmaceutical care.

The school system and enrollment student amount are in the below Table 1.

Table 2 shows the undergraduate curricula for these programs.

For postgraduate programs, students often attend professional courses in the first year, and complete research module. Clinical practice commences in the second and third years.

### Hong Kong, China

In the late 1930s, Zeng Tianzhi established the Scientific Acupuncture College and Lu Jueyu established the Practical Acupuncture Institute in Hong Kong. These were the earliest educational institutions of acupuncture in Hong Kong.<sup>1</sup> In 1991, Hong Kong University offered advanced courses in Chinese medicine through the Hong Kong Institute of Vocational Education, which is the earliest publically-run school in Hong Kong.<sup>2</sup> The establishment of the Chinese Medicine School of Hong Kong Baptist University in 1998 marked the beginning of TCM higher education in Hong Kong. The first group of professional TCM practitioners in Hong Kong graduated with bachelor's degrees in 2003. The most popular TCM educational method still remains the traditional father-son and master-apprentice education pattern. Although institutional education is a

**Table 1** Recruitment to Chinese medicine programs at the Beijing University of Chinese Medicine (2012–2015 data).

Program/major	Level	Number of students
Chinese Medicine	Undergraduate	400–420
	Postgraduate (master's)	500–520
	Postgraduate (PhD)	140–150
Chinese Materia Medica	Undergraduate	240–260
	Postgraduate (master's)	190–200
	Postgraduate (PhD)	30–40
Acupuncture	Undergraduate	150–160
	Postgraduate (master's)	70–80
	Postgraduate (PhD)	10–20

**Table 2** The undergraduate curricula for Chinese medicine programs at the Beijing University of Chinese Medicine.

Program/major	Curriculum category	Examples of courses
Chinese Medicine program	Fundamental courses of Chinese medicine	Basic Theories of Chinese Medicine, Chinese Materia Medica, Formulas of Chinese Medicine and Diagnostics of Chinese Medicine
	Fundamental courses of Western medicine	Anatomy of the Human Body, Physiology and Pathology
	The classics of TCM	Selected Readings of <i>Huangdi's Canon of Medicine Treatise on Cold Damage Diseases</i> , <i>Synopsis of Prescriptions of the Golden Chamber</i> , and <i>Warm Diseases</i>
	Others	Doctrines of Different Schools in Chinese Medicine, Chinese Medical Classics, and Acupuncture and Moxibustion
Acupuncture, moxibustion and <i>tuina</i> program	Clinical practice	
	Fundamental courses of basic theories of acupuncture and moxibustion	Meridians and Acupoints, Selective Readings of Acupuncture Classics, and Acupuncture Theories of Different Schools
	Fundamental courses of acupuncture and moxibustion in clinical practice	Techniques of Acupuncture and Moxibustion, Therapeutics of Acupuncture and Moxibustion, and Medical Qigong
	Fundamental courses of <i>tuina</i>	Massage and <i>Tuina</i> , <i>Tuina</i> techniques, and Fundamentals of Chinese Medicine
	Experiment courses	Bone-setting Experimental Science of Acupuncture and Moxibustion, Rehabilitation of Acupuncture and Moxibustion
	Clinical practice	

relatively recent phenomenon, it will continue to develop in the future.<sup>3</sup> There is currently no independent TCM hospital in Hong Kong; therefore, expertise is drawn from other educational sources in China. For example, Hong Kong cooperates with the Shanghai University of Traditional Chinese Medicine and Guangzhou University of Traditional Chinese Medicine in education and research; this enables the adoption of Chinese educational standards for TCM education and the use of university experience in running teaching schools.<sup>2</sup>

The School of Chinese Medicine at the Chinese University of Hong Kong is an example. This is affiliated to the Li Ka Shing Faculty of Medicine. Students of the latter institution are mainly locals and it admits about 25 students each year.<sup>4</sup> It offers full-time, part-time, and graduate programs. The undergraduate education is 6 years and includes Chinese medicine and biomedicine courses as well as early and substantial clinical training. They provide three teaching languages (English, Mandarin, and Cantonese).

In the School of Chinese Medicine, courses on Chinese medicine are taught in Mandarin, Cantonese is used in clinical training and practice, and Western medicine and other public courses are taught in English. Clinical skills training courses are also offered. During the first 5 years, students undergo clinical training with supervisors in Hong Kong to cultivate and establish their Chinese medicine clinical thinking. During the sixth year, students go to mainland China for further clinical training. There is also a

tradition of in-the-field investigation that includes gathering herbs in Sichuan and Yunnan Provinces and visiting farms to understand the source of medicinal materials. In addition, students study the toxicology of medicinal herbs. Part-time programs are provided for TCM practitioners, acupuncturists, and TCM pharmacists with at least 5 years working experience, to further improve their professional qualities and clinical skills. The programs offered are Master of Chinese Medicine (Acupuncture), Master of Medicine (Internal Medicine), Master of Science (Chinese Materia Medica), and Bachelor of Pharmaceutics of TCM. Alongside the development of traditional Chinese medicine, these graduate programs have enrolled students with MPhil or PhD degrees, including TCM and biomedical science, to foster the modernization and scientific development of TCM.

### Traditional Chinese medical education in the United Kingdom

The first tertiary institution of TCM in the UK (the College of Traditional Acupuncture) was established in 1960.<sup>5</sup> The current TCM educational institutions in the UK can be classified into private acupuncture schools and public universities with acupuncture and Chinese medicine programs. Programs of Chinese medicine or acupuncture have been offered in various environments: 1) A private

college that has merged with a university and no longer operates as an independent college, such as the London School of Acupuncture and Traditional Chinese Medicine. This was jointly run with the University of Westminster but is now part of the university; the School no longer exists; 2) A program jointly run with private acupuncture schools, such as the College of Integrated Medicine, which operates as a private college but is validated by the University of Kingston; 3) Programs developed from scratch, such as the first 5-year program of Chinese medicine in Europe jointly run by the Middlesex University and Beijing University of Chinese Medicine<sup>6,7</sup>; 4) A university program working with a Confucius Institute, such as the one offered by London South Bank University; 5) Programs offered by private colleges not validated by a university.

As of July 2015, the British Acupuncture Accreditation Board (BAAB) has approved 12 acupuncture colleges/schools or university Chinese medicine or acupuncture programs.<sup>8</sup> There are also courses run by other associations, but these are for those who are qualified in Western medicine and usually do not follow TCM theories and practice. As of July 2015, of those courses overseen by the BAAB, there are four fully validated/accredited university courses, three private colleges (also university validated), two private colleges working toward accreditation (private), one private college currently developing its program, and one degree-level equivalent course (not university validated).

Students enrolled in Chinese medicine courses in the UK are usually older ones and are seeking a career change. Students may be lawyers, doctors, nurses, engineers, flight attendants, and secretaries.<sup>9</sup> Short-term training is only open to Western medical doctors, many of whom work and take courses either as continuing professional development or in their spare time.<sup>7</sup>

Currently, Chinese medicine and acupuncture teaching plans for both private acupuncture schools and universities are based on the BAAB professional criteria. Accredited courses are at least 3 years for full-time programs, at least 3600 credit hours for part-time programs, at least 1200 credit hours for basic courses, and at least 400 credit hours for clinical internship training.<sup>10</sup> During clinical internship training, students are trained in clinical practice sites in their schools or universities.<sup>10</sup> Students study theories of TCM and Western medicine to learn how to integrate TCM and Western medicine and provide comprehensive diagnosis and treatment for clinical practice. However, hospital training is not currently available for students, so they tend to see the types of patients commonly encountered in general practice. Through its collaboration with the Confucius Institute for TCM, London South Bank University provides clinical placements with the Heilongjiang University of TCM in the student's final year. Additional Chinese herbal medicine training is usually offered for a master's qualification.

The BAAB-accredited curriculum for TCM in the UK generally consists of fundamental courses in TCM and fundamental courses in Western medicine (pathology, physiology, anatomy). The TCM curriculum includes basic theories of Chinese medicine, Chinese medicine diagnostics, Chinese materia medica, Chinese medical formulas, meridians and acupoints, acupuncture techniques, and *tuina*. Fundamental courses in Western

medicine include anatomy of the human body, physiology, pathology, and pharmacology.<sup>11</sup> Research methods are now an intrinsic part of course delivery so that students are able to understand and interpret the evidence base for Chinese medicine. In addition, there are some elective courses such as clinical practice, marketing, *tuina*, *guasha* (scraping), and cupping. These can also be studied as part of continuing professional development.<sup>9</sup> However, not all the fundamental courses such as Chinese materia medica and Chinese medical formulas, are offered in every program. In some programs such as that offered at the London South Bank University, students learn Chinese language as part of their course. Students' extracurricular reading and self-study are an important component of their learning.<sup>12</sup> At master's level, students are expected to carry out their own research and write a dissertation consisting of either a systematic review of literature or primary research. A mapping of PhDs in UK universities identified 21 different institutions supporting complementary and alternative medicine PhDs (37% in acupuncture).<sup>13</sup>

After students obtain their qualifications as licensed TCM practitioners they become members of the British Acupuncture Council (BAC; 3200 members) or the Association of Traditional Chinese Medicine practitioners (800 members). It is estimated that the 3000 BAC members provide over 2.3 million treatments a year in the UK.

## Traditional Chinese medical education in Australia

In Australia, the first TCM school (the Australian College of Acupuncture) started to offer an acupuncture program in 1969.<sup>14</sup> In the early 1990s, degree programs in acupuncture and Chinese herbal medicine were introduced at the Victoria University of Technology and the Royal Melbourne Institute of Technology (RMIT University).

Chinese medicine is a nationally regulated profession in Australia. With the termination of grand parenting arrangements on 30 June 2015, completion of an approved program of study is now an important route to registration.<sup>15</sup> Currently, 10 TCM programs, including eight bachelor's and two master's by coursework programs, have been transitioned and approved by the Australian Health Practitioner Regulation Agency (AHPRA). These 10 TCM programs are offered by six institutions, including three universities (RMIT University, the University of Technology Sydney [UTS], and the University of Western Sydney [UWS]), and three private schools (Endeavour College of Natural Health, the Southern School of Natural Therapies, and Sydney Institute of Traditional Chinese Medicine).<sup>16</sup> The first cohort of TCM programs was being accredited by AHPRA as this manuscript was under preparation.

Undergraduate TCM programs are generally 4–5 years of full-time study.<sup>17</sup> No more than 50% of undergraduate students in tertiary institutions are recruited from high school graduates; most students in private schools are mature.<sup>18</sup> Most undergraduate programs deliver both acupuncture and Chinese herbal medicine. The curricula cover biomedical science subjects and TCM subjects. The former consists of human anatomy, physiology, pathology, microbiology,



cell biology, immunology, pharmacology, and toxicology. The latter comprises TCM basic theory, meridians, acupoints, acupuncture techniques, Chinese materia medica, formulas, classical literature, and clinical studies. There is no significant difference in total credit hours between private schools and universities.<sup>14</sup>

Master's by coursework programs comprise 3 years of part-time study of either acupuncture or Chinese herbal medicine. Students are usually existing health professionals in other disciplines such as chiropractors, osteopaths, physiotherapists, and nurses. The curricula focus on TCM subjects.

The universities in Australia also provide master's degrees by research (1.5–2 years) and PhD programs (3–4 years). Students are able to perform laboratory studies and/or clinical trials to investigate the quality, efficacy, safety, and mechanisms of acupuncture and Chinese herbal medicine.

### Traditional Chinese medical education in the United States

In the USA, the first acupuncture school (the New England School of Acupuncture) was established in 1975. This marked the beginning of the American TCM educational model.<sup>19</sup> All educational institutions of acupuncture in the USA are private schools; as of July 2015, the Accreditation Commission for Acupuncture and Oriental Medicine (ACAOM) has approved 84 private schools of Chinese medicine and acupuncture.<sup>20</sup> There are four types of acupuncture educational institutions/programs in the USA: 1) independent Chinese medicine schools offering professional acupuncture education; 2) Chinese medicine departments in Western medical schools; 3) TCM programs offering continuing education for Western medical doctors and nurses; and 4) post-doctoral TCM programs supported by the National Institutes of Health (NIH).<sup>21</sup> Chinese medicine and acupuncture education includes master's, PhD, postdoctoral, continuing, and master–apprentice training programs.<sup>22</sup> The scale of recruitment between different schools varies. Large schools have 400–500 students, medium schools have 200–300 students, and smaller schools have 30–100 students.<sup>23</sup>

Regarding the admission requirements of Chinese medicine schools, applicants must have completed 2 years of university study or a certain number of credit hours of Western medicine courses after graduation from high school.<sup>23</sup> The master's programs are generally 3–4 years, among which acupuncture programs require at least 3 years and oriental medicine programs require at least 4 years of study.<sup>24</sup> PhD training in TCM has become available relatively, and consists of at least 1200 credit hours of advanced clinical practice training in acupuncture and oriental medicine.<sup>24</sup>

Master's courses consist of training in basic theory, acupuncture and moxibustion, acupuncture point location and channel (meridian) theory, diagnostic skills, treatment techniques, counseling and communication skills, ethics and practice management, and biomedical clinical sciences.<sup>24</sup> Courses for doctoral programs are generally based on the master's curriculum, and emphasize clinical practice and Chinese medicine theory.<sup>21</sup>

### Traditional Chinese medical education in Canada

The first acupuncture school in Canada, the Canadian College of Acupuncture and Oriental Medicine, opened in 1984. It is a full-time TCM school affiliated to the East West Medical Society.<sup>25</sup> Currently, Chinese medicine and acupuncture education in Canada is generally provided by private acupuncture schools outside the university education system. Programs are based on private clinical practice and university Chinese medicine and acupuncture training programs.<sup>26</sup> A total of 19 Chinese medicine and acupuncture institutions have been approved or are under approval by education departments in Canadian provinces (most commonly located in British Columbia, Alberta, and Ontario). The scale of student recruitment varies from 10 to 150 depending on the institution.<sup>25</sup>

Chinese medicine and acupuncture education in Canada can be classified into five types: master–apprentice education, college education, undergraduate education, continuing education, and diploma programs jointly run with TCM universities in China. Among these types, master–apprentice education is becoming less available. Applicants for college education must have completed a Canadian Year 12 qualification, and enrolled students must complete about 1900 credit hours of full-time course study during six semesters and about 450 credit hours of clinical practice training. Applicants for undergraduate education must have completed 2 years of college or university study, and enrolled students must complete about 3000 credit hours of full-time course study during nine semesters and 1000 credit hours of clinical practice training. The advanced TCM practitioner training program requires 4000 credit hours of study and 1300 credit hours of clinical practice training. Continuing education is offered to ensure that Chinese medicine practitioners or acupuncturists maintain a relatively high level of clinical expertise. The interval and credit hour requirements for continuing education differ across Canadian provinces.<sup>25</sup> The educational model of diploma programs jointly run with TCM universities in China facilitates an international Canadian–Chinese exchange of clinical expertise in Chinese medicine and acupuncture. Graduates from the diploma programs can be awarded a diploma but not a degree.<sup>25</sup>

The curricula of Chinese medicine and acupuncture programs have different emphases but generally include acupuncture, history of Chinese medicine, basics of Chinese medicine, acupuncture and moxibustion, diagnosis (TCM/Western medicine), treatment techniques, safety of acupuncture and moxibustion instruments, counseling and communication skills, medical ethics and practice management, basics of Western medicine and clinical practice, Chinese herbals, different clinical department sciences, and other TCM therapies.<sup>27</sup>

### Traditional Chinese medical education in Italy

The first acupuncture school in Italy was created by Ulderico Lanza in Torre Pelice in 1968.<sup>27</sup> Three types of TCM education are available: 1) diploma education in comprehensive universities; 2) short-term training in

comprehensive universities; and 3) education in independent acupuncture and Chinese medicine institutions. Since 2004, governmental cooperation between Italy and China has made available a Master's in Chinese medicine program at the School of Medicine of La Sapienza University of Rome. The School of Medicine of the University of Milan and the School of Medicine of the University of Florence have cooperated with Beijing University of Chinese Medicine and Nanjing University of Chinese Medicine to offer master's courses in integrated traditional Chinese and Western medicine. Graduates who successfully pass examinations and submit a thesis can be awarded a master's degree in integrated traditional Chinese and Western medicine. Short-term acupuncture training courses are available at the School of Medicine of the University of Milan and the University of Pavia. Chinese medicine and acupuncture training is also available in approximately 20 Chinese medicine and acupuncture private schools.<sup>11</sup>

Compared with other European countries, TCM education in Italy is available at a relatively late stage of study but consists of higher-level, graduate training.<sup>11</sup> For graduate education, students must complete 6 years of medical education to obtain a master's degree in medicine and surgery and then must pass a national examination to enroll in a 4–6-year program/major (specialization), such as pediatrics, surgery, or gynecology, based on their majors. Alternatively, students can complete 3 years of study to become a family doctor, or study Chinese medicine, acupuncture, or other complementary medicine. Physicians in training for a specialization or to be a family doctor can simultaneously undertake training in TCM or acupuncture in private schools, but not in universities.

In Western medicine schools, TCM (acupuncture) courses are generally 1–2 years; in private schools, TCM courses are generally 3–4 years. Phytotherapy is usually a 2-year program and is restricted to physicians who already have some education in Chinese medicine.

For example, the Italian Federation of Acupuncture Societies (FISA), a typical Italian TCM tertiary institution, requires at least 400 credit hours of theory courses and at least 100 credit hours of clinical practice. This program has been developed according to the most recent Italian acupuncture regulation: the State-Regions Agreement on

CAM of February 2013. Regarding the curriculum, fundamental courses are often offered in the first year including basics of Chinese medicine and acupuncture, acupuncture points, neurophysiology, pathology, and physiology according to TCM, and clinical practice training is offered in the second and third year. In addition to specialized Chinese medicine and acupuncture courses, some special practical courses are offered such as *tuina*, *qigong*, reflexology, massage, and mind–body therapy.<sup>28</sup>

## Comparing and contrasting traditional Chinese medical education

As we can see from the above review, there are remarkable differences in educational models among the six countries that reflect differences in governmental policy and regulations on healthcare delivery, as well as the understanding of, and attitudes toward, TCM.

Among the five Western countries, the UK was the first to develop TCM education and Canada was the last country to offer training. China has a mature system of integrated TCM education and training methods that incorporate Western medicine. Italy has the highest admission requirements, as it requires applicants to have a professional medical background and a master's degree. Admission requirements of the other countries are not as strict and a professional medical background is not required. The level of TCM education varies among the six countries: China, the UK, and Australia start from undergraduate education, Canada starts from college education, and Italy has higher requirements for applicants, who must be medically qualified and have a master's degree. Therefore, the six countries vary in the duration of training. Except for China, the number of TCM educational institutions is highest in the USA (Table 3).

All the six countries provide TCM education in universities and private schools, and through TCM training programs and joint programs, except Canada, which offers TCM education in institutes outside of the university educational system (Table 4).

Regarding the curriculum, compared with China, the UK, Australia, and the USA offer additional courses such as marketing and counseling and communication skills to help

**Table 3** Comparison of TCM educational provision in the six countries.

No.	Country	Starting year	Starting level	Student source	Number of TCM educational institutions
1	Mainland China	1956	Undergraduate education	Graduates from high school	45 TCM universities, and 215 Western medicine colleges or universities with TCM programs/majors
	Hong Kong	1930s			N/A
2	UK	1960	Undergraduate education	Not limited	12
3	Italy	1968	Graduate education	Master of Medicine	About 20 Private Schools
4	Australia	1969	Undergraduate education	Not limited	6
5	US	1975	Graduate education	Not limited	84
6	Canada	1984	College education	Graduates from high schools, or students from university in his/her second year or above	19

**Table 4** Nature and number of TCM educational institutions in the six countries.

No.	Country	Independent TCM college or university	Other tertiary institutions with TCM program or major	Joint program	Private school	Other
1	China—mainland	✓	✓	✓	✓	
	China—Hong Kong		✓	✓		
2	UK		✓	✓	✓	
3	Italy	✓	✓	✓	✓	
4	Australia	✓	✓		✓	
5	US	✓	✓		✓	NIH post-doctoral program
6	Canada				✓	

students locate future job or entrepreneurial opportunities. The UK also provides a special course called “Five-Element Acupuncture” that includes a psychotherapeutic perspective, which is not offered in China. Acupuncture courses in Canada pay more attention to the application and safety of acupuncture instruments (Table 5).

This study selected higher education institutions in six typical countries in Asia, Europe, America, and Oceania to analyze, compare, and contrast their TCM education. We examined the numbers and characteristics of educational institutions, the initial stage of TCM education, the student source, the duration of study, and the curriculum system.

This comparison should provide information about the further development of international standards in TCM education.

The data collection in this study was based on a literature search and data from official websites. Most data came from a literature search, except for data about training in China. There was a lack of survey data because of limitations in funding, time, and the region. Most of the Western countries selected in this study are English-speaking countries. Further research is needed to explore TCM education in other countries such as Germany, Portugal, Denmark, Holland, and Norway.

**Table 5** Comparison of curricula among the six countries.

No.	Country	Foundational courses of TCM	Foundational courses of Western medicine	Classics of TCM	Clinical practice	Other	Feature
1	China—mainland	✓	✓	✓	✓		Focus both on TCM theories and clinical practice, and give consideration to both TCM and Western medicine.
	China—Hong Kong	✓	✓	✓	✓		Focus both on TCM theories and clinical practice, and give consideration to both TCM and western medicine.
2	UK	✓	✓		✓	Marketing	More focus on clinical practice. Practical.
3	Italy	✓	✓		✓		Similar to curriculum design in China. The ratio of clinical practice is larger than that in China.
4	Australia	✓			✓		Focus more on clinical practice. Practical.
5	US-Master program	✓	✓		✓	Counseling and Communicating on Skills	Focus on basic theories of TCM and communication skills.
	US-Doctoral program			✓	✓		Focus on Classics of TCM and clinical practice.
6	Canada	✓	✓		✓	Safety of Acupuncture and Moxibustion Instruments	Focus on basic theories of TCM and safety of a therapy.

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